

New York CAPS Grape Commodity Survey Targets 2015 Summary/Final Report

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- **Grape Commodity Survey (GCS)**
 - *Lobesia botrana* – **European Grape Vine Moth (GVM)**
 - *Adoxophyes orana* – **Summer Fruit Tortrix Moth (SFT)**
 - *Eupoecilia ambiguella* – **European Grape Berry Moth (EGBM)**
 - *Spodoptera littoralis* – **Egyptian Cotton Leafworm (ECW)**
 - *Planococcus ficus* – **Vine Mealybug (VMB)**
 - *Candidatus* Phytoplasma australiense – **Australian Grapevine Yellows**
 - *Candidatus* Phytoplasma vitis – **Flavescence doree**

The 2015 grape commodity survey was conducted in conjunction with Cornell Cooperative Extension's NYS IPM Program and Grape Programs in the main growing regions of New York State; Lake Erie, Finger Lakes, Long Island and the Hudson Valley. Traps were placed in vineyards starting in early to mid-July in all regions and were serviced biweekly 6 times. The four target moths involved in the survey are: European Grapevine Moth, Summer Fruit Tortrix Moth, European Grape Berry Moth, and Egyptian Cotton Leafworm. An additional pest, Vine Mealybug or *Planococcus ficus*, was added in the Finger Lakes, Long Island and Hudson Valley areas.

359 traps were deployed in 29 vineyards total; 5 in the Hudson Valley, 7 in Long Island, 11 in the Finger Lakes Region and 5 in the Lake Erie Region. In addition traps were deployed in 3 nurseries total; 1 in the Finger Lakes Region and 2 in the Lake Erie Region.

1. European Grape Vine Moth (GVM) - *Lobesia botrana*

Delta traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis and at a distance of 6-foot into the 2nd row in from the SW corner of the vineyard. Vineyards that had been recently planted using vines sourced from California, and other west coast, nurseries were given priority for participation in the program. In vineyards consisting of multiple varieties, traps were placed in the southeast corner of each blocks where the variety changed. Traps were deployed in 5 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) 7 in Long Island (Suffolk County), 11 in the Finger Lakes Region (Schuyler, Seneca, Ontario and Yates Counties) and 5 in the Lake Erie Region (Chautauqua County). In addition traps were deployed in 3 nurseries total; 1 in the Finger Lakes Region and 2 in the Lake Erie Region. 86 traps were placed by 4 project cooperators in these 28 vineyards and 3 nurseries. Traps were maintained in the field and serviced every two weeks

resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

2,056 moths were collected from the traps July through October. Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell found no evidence of the European Grape Vine Moth.

2. Summer Fruit Tortrix Moth (SFT) - *Adoxophyes orana*

Delta traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis and at a distance of 6-foot into the 2nd row in from the SW corner of the vineyard. Vineyards that had been recently planted using vines sourced from California, and other west coast, nurseries were given priority for participation in the program. In vineyards consisting of multiple varieties, traps were placed in the southeast corner of each blocks where the variety changed. Traps were deployed in 5 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) 7 in Long Island (Suffolk County), 11 in the Finger Lakes Region (Schuyler, Seneca, Ontario and Yates Counties) and 5 in the Lake Erie Region (Chautauqua County). In addition traps were deployed in 3 nurseries total; 1 in the Finger Lakes Region and 2 in the Lake Erie Region. 86 traps were placed by 4 project cooperators in these 28 vineyards and 3 nurseries. Traps were maintained in the field and serviced every two weeks resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

2,225 moths were collected from the traps July through October. Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell found no evidence of the Summer Fruit Tortrix Moth.

3. European Grape Berry Moth (EGBM) - *Eupoecilia ambiguella*

Pherocon 1C traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis at the end post of the 5th row in from the SW corner of the vineyard and the 5th row in from the SE corner of each vineyard surveyed. Traps were deployed in 5 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) 7 in Long Island (Suffolk County), 11 in the Finger Lakes Region (Schuyler, Seneca, Ontario and Yates Counties) and 5 in the Lake Erie Region (Chautauqua County). In addition traps were deployed in 3 nurseries total; 1 in the Finger Lakes Region and 2 in the Lake Erie Region. 86 traps were placed by 4 project cooperators in these 28 vineyards and 3 nurseries. Traps were maintained in the field and serviced every two weeks resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

8,976 moths were collected from the traps July through October. Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell found no evidence of the European Grape Berry Moth.

4. Egyptian Cotton Leafworm (ECW) - *Spodoptera littoralis*

Plastic Bucket Traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis and at a distance of 5-foot into each of the outside rows of each vineyard surveyed. Traps were deployed in 5 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) 7 in Long Island (Suffolk County), 11 in the Finger Lakes Region (Schuyler, Seneca, Ontario and Yates Counties) and 5 in the Lake Erie Region (Chautauqua County). In addition traps were deployed in 3 nurseries total; 1 in the Finger Lakes Region and 2 in the Lake Erie Region. 86 traps were placed by 4 project cooperators in these 28 vineyards and 3 nurseries. Traps were maintained in the field and serviced every two weeks resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

1,692 moths were collected in the traps from July through October. Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell found no evidence of the Egyptian Cotton Leafworm.

5. Vine Mealybug (VMB) – *Planococcus ficus*

Delta traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis and at a distance of 6-foot into the 2nd row in from the SW corner of the vineyard. Vineyards that had been recently planted using vines sourced from California, and other west coast, nurseries were given priority for participation in the program. In vineyards consisting of multiple varieties, traps were placed in the southeast corner of each blocks where the variety changed. Traps were deployed in 5 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) and 7 in Long Island (Suffolk County). In addition traps were deployed in a nursery in the Finger Lakes Region. 15 traps were placed by 3 project cooperators in these 12 vineyards and 1 nursery. Traps were maintained in the field and serviced every two weeks resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

2,344 moths were collected in the traps from July through October. Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell, and the USDA Systematic Entomology Laboratory, found no evidence of the Vine Mealybug.

Visual Inspection for Australian Grapevine Yellows and Flavescence doree

A visual inspection for Australian Grapevine Yellows and Flavescence doree was conducted in the same vineyards and nurseries used to conduct the Grape Commodity Survey (GCS). Visual examinations were conducted in 5 vineyards in the Hudson Valley (Columbia, Dutchess and Ulster County) 7 in Long Island (Suffolk County), 11 vineyards and 1 nursery block in the Finger Lakes Region (Schuyler, Seneca, Ontario and Yates Counties) and 5 vineyards and 2 nursery blocks in the Lake Erie Region (Chautauqua County). There were no reports of Australian Grapevine Yellows or Flavescence doree in any of the 28 vineyards or 3 nursery blocks involved in the survey.

Virus Sampling in the 2015 CAPS Project

Virus sampling/testing was performed in July and again in September/October of 2015 in the same vineyards and nurseries used to conduct the **GCS**.

Protocol:

- If possible vineyards that are declining and suspected of having problems with viruses were identified and sampled. If that was not feasible, vineyards were chosen at random.
- In each vineyard a panel was chosen with 4-6 vines. In July, 2-3 young leaves were pulled per vine for a total of 15 leaves. Each vineyard was sampled in 4 sites.
- In September, the same sampling procedure was followed with the exception of selecting mature basal leaves.
- In the nurseries, one young leaf per vine for 15 vines was sampled in July. In September, mature basal leaves were chosen.
- The leaves were placed in zip lock bags, labeled and sent overnight to the Marc Fuchs lab for testing.

Spring Virus Sampling

The viruses tested for in the spring sampling were: Grapevine fanleaf Virus (GFLV); Arabis mosaic Virus (ArMV); Tomato ringspot virus/Grapevine yellow vein disease (ToRSV); Tobacco ringspot virus (TRSV); Grapevine virus A (GVA); Tomato black ring virus (TBRV); Strawberry latent ringspot Virus (SLRSV); Raspberry ringspot virus (RpRSV); Grapevine fleck virus (GFkV); Grapevine leafroll-associated virus 1 (GLRaV-1), and Grapevine leafroll-associated virus 3 (GLRaV-3).

Fall Virus Sampling

The viruses tested for in the fall sampling were: Grapevine leafroll-associated virus 1 (GLRaV-1), 2 (GLRaV-2), 3 (GLRaV-3), and 4 (GLRaV-4); and Grapevine red blotch-associated virus (GRBaV)

Results

- **Grapevine Fanleaf Virus (GFLV).** No positive results.
- **Arabis Mosaic Virus (ArMV).** No positive results.
- **Tomato Ring Spot Virus/Grapevine Yellow Vein Disease (ToRSV).** 3 positives found in the Hudson Valley.
- **Tobacco Ringspot Virus (TRSV).** No positive results.
- **Grapevine Virus A (GVA)** No positive results.
- **Tomato Black Ring Virus (TBRV).** No positive results.
- **Strawberry Latent Ringspot Virus (SLRSV).** No positive results.
- **Raspberry Ringspot Virus (RpRSV).** No positive results.
- **Grapevine Fleck Virus (GFkV).** No positive results.
- **Grapevine Leafroll – associated virus type 1 (GLRaV-1).** Found in 26 samples – 22 in the Finger Lakes Region, 3 in Long Island and 1 in the Lake Erie Region.
- **Grapevine Leafroll – associated virus type 2 (GLRaV-2).** Found in 1 sample in the Finger Lakes.
- **Grapevine Leafroll – associated virus type 3 (GLRaV-3).** Found in 44 samples – 16 in the Finger Lakes Region, 11 in the Lake Erie Region, 12 in Long Island, and 5 in the Hudson Valley.
- **Grapevine Leafroll – associated virus type 4 (GLRaV-4).** Found in 8 samples – 6 in the Finger Lakes Region, 1 in the Lake Erie Region and 1 in Long Island.

Virus Testing Positive Results(Spring)	#samples total in County	(GFLV)	(ArMV)	(ToRSV)	(TRSV)	(GVA)	(TBRV)	(SLRSV)	(RpRSV)	(GFKV)	(GLRaV-1)	(GLRaV-3)	(GLRaV-4)
Chautauqua	28	0	0	0	0	0	0	0	0	0	0	1	0
Ontario	8	0	0	0	0	0	0	0	0	0	0	0	0
Schuyler	20	0	0	0	0	0	0	0	0	0	3	1	0
Seneca	24	0	0	0	0	0	0	0	0	0	0	6	3
Yates	65	0	0	0	0	0	0	0	0	0	2	4	2
Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0
Dutchess	0	0	0	0	0	0	0	0	0	0	0	0	0
Ulster	12	0	0	3	0	0	0	0	0	0	0	1	0
Suffolk	0	0	0	0	0	0	0	0	0	0	0	0	0

Virus Testing Positive Results(Fall)	#samples total in County	(GRBaV)	(GLRaV-1)	(GLRaV-2)	(GLRaV-3)	(GLRaV-4)
Chautauqua	44	0	1	0	10	1
Ontario	8	0	0	0	0	0
Schuyler	0	0	0	0	0	0
Seneca	11	0	5	0	2	0
Yates	28	0	12	1	4	1
Columbia	1	0	0	0	0	0
Dutchess	1	0	0	0	0	0
Ulster	11	0	0	0	4	0
Suffolk	122	0	3	0	12	1

There were a total of 83 (26 in spring and 57 in fall) positive results out of 394 virus tests completed.